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(54) ANTI-FUNGUS COATING AGENT, ANTI-FUNGUS AGENT AND METHOD FOR INHIBITING NOSOCOMIAL INFECTION

(57) Abstract:

PROBLEM TO BE SOLVED: To provide an anti-fungus coating agent and an anti-fungus agent that are highly safe and excellent in an anti-fungal effect, does not need frequent maintenance, and can be widely employed, and also a method for inhibiting a nosocomial infection by using the anti-fungus coating agent and/or anti-fungus agent so as to simply, appropriately choose the manner/method of application depending on the object of application in a hospital.

SOLUTION: A spraying anti-fungus coating agent obtained by sealing anti-fungal particles and a spraying medium component in a spray can contains, as a base component, an adhesive polymer (a film base component) constituted mainly of a hydrophobic group wherein the anti-fungal particles can be spray-coated in intimate contact with a resin through the film base component. The spraying anti-fungus coating agent contains ethanol as an alcohol component, which permits instantaneous alcoholic disinfection after spraying.

agents, and prevention of nosocomial infections  
IN Yanagihara, Kazuo; Kita, Shoji  
PA Daido Special Steel Co., Ltd., Japan; Sanko Sekiyu Kogyo K. K.  
SO Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C09D201-00

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C09D005-14; C09D005-16; C09D183-04; B01J021-06; B01J035-02

CC 63-8 (Pharmaceuticals)

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| PI. JP 2001081409 | A2 | 20010327 | JP 1999-261086 | 19990914 |
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AB The \*\*\*coatings\*\*\* contain \*\*\*antibacterial\*\*\* particles comprising metal \*\*\*nanoparticles\*\*\* attached to submicron ceramic particles, \*\*\*coating\*\*\* bases comprising polymer binders and hydrophilic or water-repellent components, and liq. dispersants. The \*\*\*antibacterial\*\*\* agents contain Ag and benzotriazole as a discoloration prevention agent. The \*\*\*antibacterial\*\*\* \*\*\*coatings\*\*\* and/or agents are applied to the surfaces of materials in hospitals to prevent nosocomial infection.

ST \*\*\*antibacterial\*\*\* \*\*\*coating\*\*\* metal ceramic nosocomial infection; \*\*\*silver\*\*\* benzotriazole \*\*\*antibacterial\*\*\* nosocomial infection prevention

IT Polyurethanes, biological studies

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses) (acrylic, binders; \*\*\*antibacterial\*\*\* \*\*\*coatings\*\*\* contg. metal-ceramic particles and polymer binders for nosocomial infection prevention)

IT Silanes

RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses) (alkoxy, dispersants; \*\*\*antibacterial\*\*\* \*\*\*coatings\*\*\* contg. metal-ceramic particles and polymer binders for nosocomial infection prevention)

IT \*\*\*Antibacterial\*\*\* agents

Antioxidants

Discoloration prevention agents

Dispersing agents

Sterilization and Disinfection

( \*\*\*antibacterial\*\*\* \*\*\*coatings\*\*\* contg. metal-ceramic particles and polymer binders for nosocomial infection prevention)

IT Metals, biological studies

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

( \*\*\*antibacterial\*\*\* particles; \*\*\*antibacterial\*\*\* \*\*\*coatings\*\*\* contg. metal-ceramic particles and polymer binders for nosocomial infection prevention)

IT \*\*\*Coating\*\*\* materials

(bactericidal; \*\*\*antibacterial\*\*\* \*\*\*coatings\*\*\* contg. metal-ceramic particles and polymer binders for nosocomial infection prevention)

IT Acrylic polymers, biological studies  
Alkyd resins

**\* NOTICES \***

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**CLAIMS**

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[Claim(s)]

[Claim 1] By containing an antibacterial particle, a paint film substrate formation component, and the medium which distributes them and the becoming liquefied medium component, and applying to an application object front face It is the antibacterial coat agent which forms the antibacterial paint film which the aforementioned antibacterial particle distributed into the paint film substrate originating in the aforementioned paint film substrate formation component. the aforementioned antibacterial particle The metal particles of nano meter order are made to adhere to the ceramic particle of submicron size. the aforementioned paint film substrate formation component The antibacterial coat agent characterized by being what constituted by the subject in the base component which consists of a macromolecule component for sticking the aforementioned antibacterial paint film on an application object front face, and the functional grant component for giving a hydrophilic property or one of water-repellent functions to the antibacterial paint film front face formed.

[Claim 2] The functional grant component of the aforementioned paint film substrate formation component is an antibacterial coat agent according to claim 1 for which what is localized in the surface section when the aforementioned antibacterial paint film is formed is used.

[Claim 3] The aforementioned ceramic particle is an antibacterial coat agent according to claim 1 or 2 which are one sort or two sorts or more of things chosen from among titanium oxide, a silicon dioxide, a feldspar, a zeolite, a zinc oxide, a zirconium dioxide, and a calcium carbonate.

[Claim 4] The antibacterial coat agent according to claim 3 for which what makes anatase type titanium oxide a subject is used as the aforementioned titanium oxide.

[Claim 5] The aforementioned metal particles are antibacterial coat agents according to claim 1 to 4 which are one sort or two sorts of things chosen from among silver and/or copper.

[Claim 6] The aforementioned liquefied medium component is an antibacterial coat agent according to claim 1 to 5 which is what makes alcohol a subject.

[Claim 7] The aforementioned paint film substrate formation component is an antibacterial coat agent according to claim 1 to 6 which is that to which the aforementioned base component makes an urethane component a subject.

[Claim 8] The aforementioned functional grant component is an antibacterial coat agent according to claim 1 to 7 constituted by the subject in the hydrophilic radical in

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**DETAILED DESCRIPTION**

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[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the comprehensive hospital infection prevention method that various application modes can be made to correspond to especially an application member, about an antibacterial coat agent, an antimicrobial agent, and the hospital infection prevention method of having used them.

[0002]

[Description of the Prior Art] Many and unspecified persons need to include and prevent infection of a disease germ in \*\*, such as hotels including living together, or the special home for the aged and hospital which lead community life and do both meals etc., a meeting place, and a school dormitory. Therefore, safety is high, and a complicated maintenance is unnecessary, and the antimicrobial agent excellent in the sterilization effect is needed. Then, conventionally, the antimicrobial agent which has a photocatalyst function is distributed or thin film covered to a predetermined member, and giving antibacterial to the predetermined member is known. The oxidation is activated for photocatalyst nature matter, such as titanium oxide, by optical irradiation of specific wavelength, and this disassembles the organic substance, such as a bad smell and various disease germs.

[0003] On the other hand, in order to prevent infection of the disease germ in a hospital, i.e., a hospital infection, applying the antimicrobial agent containing the above-mentioned photocatalyst nature matter and metal particles to the various members in a hospital is indicated by JP,7-102678,A.

[0004]

[Problem(s) to be Solved by the Invention] By the way, when using such photocatalyst nature matter as an antimicrobial agent, it is required for an application member to carry out the thin film application of this antimicrobial agent, for example, and to enable it to choose its application mode and method suitably according to a use use and a use part especially is desired. Moreover, it needs to be difficult absolutely to prevent a hospital infection, it needs to be indispensable, also needs to combine covering to the member with the purpose, and needs to make an application mode and a method correspond only by for example making the member in a hospital cover the photocatalyst nature matter. [ of sterilization disinfection, and the synthetic cure against a hospital infection of chemical-resistant grant of a thin film ]

order to give a hydrophilic property to the antibacterial paint film obtained.

[Claim 9] The aforementioned functional grant component is an antibacterial coat agent according to claim 1 to 8 constituted by the subject in the hydrophobic radical in order to give water repellence to the antibacterial paint film obtained.

[Claim 10] The aforementioned hydrophobic radical is an antibacterial coat agent according to claim 9 which is what contains a fluorine component at least.

[Claim 11] The antibacterial coat agent according to claim 1 to 10 by which an atomizing-medium component is contained in the aforementioned medium component, and the antibacterial coat agent concerned is used as the letter constituent of spraying.

[Claim 12] An antibacterial particle. Macromolecule component. It is the antibacterial coat agent equipped with the above, and the aforementioned antibacterial particle is characterized by using what the metal particles of nano meter order are made to adhere to the ceramic particle of submicron size, and contains a silicon system alkoxide as a dispersant.

[Claim 13] The aforementioned silicon system alkoxide is an antibacterial coat agent according to claim 12 which is a silicon methoxide.

[Claim 14] The aforementioned dispersant is an antibacterial coat agent according to claim 12 or 13 which is a thing containing ethylenediaminetetraacetic acid.

[Claim 15] The aforementioned paint film substrate formation component is an antibacterial coat agent according to claim 12 to 14 which is what contains an acrylic resin as one of the major components.

[Claim 16] The aforementioned paint film substrate formation component is an antibacterial coat agent according to claim 12 to 15 which is what contains an urethane system resin as one of the major components.

[Claim 17] The aforementioned paint film substrate formation component is an antibacterial coat agent according to claim 12 to 16 which is what contains an alkyd system resin as one of the major components.

[Claim 18] The antibacterial coat agent according to claim 12 to 17 constituted as a 2 liquid hybrid model paint which consists of a first agent which the non-hardening resin component and the aforementioned liquefied medium component which should turn into the aforementioned paint film substrate formation component contain, and the second agent which the curing agent for stiffening the non-hardening resin component contains.

[Claim 19] the aforementioned antibacterial particle and the silicon system alkoxide component which makes the aforementioned dispersant -- the aforementioned curing agent -- the [ aforementioned ] -- the antibacterial coat agent according to claim 18 blended with the 2 agent side

[Claim 20] The aforementioned paint film substrate formation component is an antibacterial coat agent according to claim 12 to 19 which contains a wax emulsion component as one of the major components.

[Claim 21] The aforementioned paint film substrate formation component is an antibacterial coat agent according to claim 20 which contains macromolecule emulsion components other than a wax as one of the major components.

[Claim 22] The antibacterial coat agent according to claim 1 to 21 which the benzotriazol contains as an antitarnish agent.

[Claim 23] The antimicrobial agent characterized by containing the metal silver

component as an antibacterial component, and the benzotriazol as an antitarnish agent.

[Claim 24] the antibacterial constituent which contains at least the antibacterial particle which made the metal particles of nano meter order adhere to the ceramic particle of submicron size -- the member in a hospital -- the hospital infection prevention method characterized by applying to a front face

[Claim 25] The hospital infection prevention method according to claim 24 that an antibacterial coat agent and/or an antimicrobial agent according to claim 1 to 23 are used as the aforementioned antibacterial constituent.

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[Translation done.]